

**NOTE:** If you own a 1985 or later model, first check the Supplement at the back of the book for any new service information.

## CHAPTER SIX

# FUEL AND EXHAUST SYSTEMS

The fuel system consists of the fuel tank, the shutoff valve, a single carburetor and the air cleaner.

The exhaust system consists of an exhaust pipe and a muffler.

This chapter includes service procedures for all parts of the fuel system and exhaust system. Air cleaner service is covered in Chapter Three. **Table 1** and **Table 2** are at the end of this chapter.

### CARBURETOR OPERATION

For proper operation a gasoline engine must be supplied with fuel and air mixed in proper proportions by weight. A mixture in which there is an excess of fuel is said to be rich. A lean mixture is one which contains insufficient fuel. A properly adjusted carburetor supplies the proper mixture to the engine under all operating conditions.

The carburetor consists of several major systems. A float and float valve mechanism maintain a constant fuel level in the float bowl. The pilot system supplies fuel at low speeds. The main fuel system supplies fuel at medium and high speeds. A starter (choke) system supplies the very rich mixture needed to start a cold engine.

### CARBURETOR SERVICE

Major carburetor service (removal and cleaning) should be performed at the intervals indicated in Chapter Three or when poor engine performance, hesitation and little or no response to mixture adjustment is observed. Alterations in jet size and throttle slide cutaway, and changes in jet needle position, etc., should be attempted only if you're experienced in this type of "tuning" work; a bad guess could result in costly engine damage or, at least, poor performance. If, after servicing the carburetor and making the adjustments described in

this chapter, the ATC does not perform correctly (and assuming that other factors affecting performance are correct, such as valve clearance, ignition timing and condition, etc.), the vehicle should be checked by a dealer or a qualified performance tuning specialist.

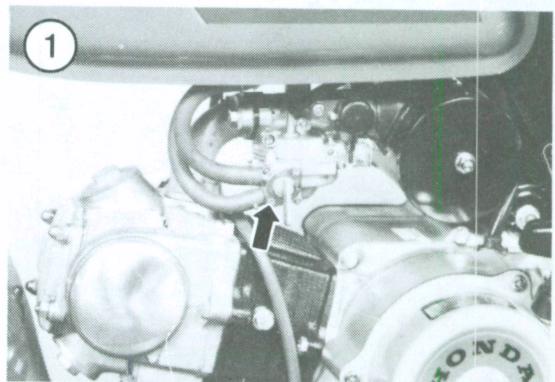
Two different carburetor designs are used, depending on the year and model. Be sure to use the correct procedure for your specific ATC.

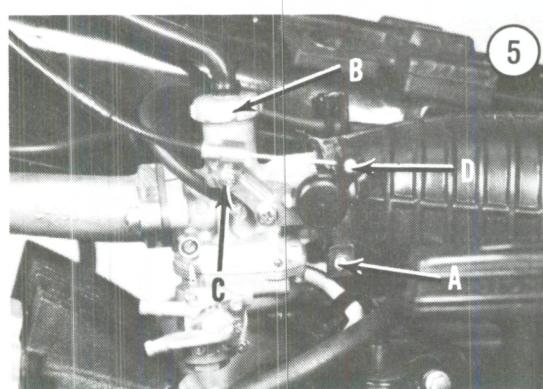
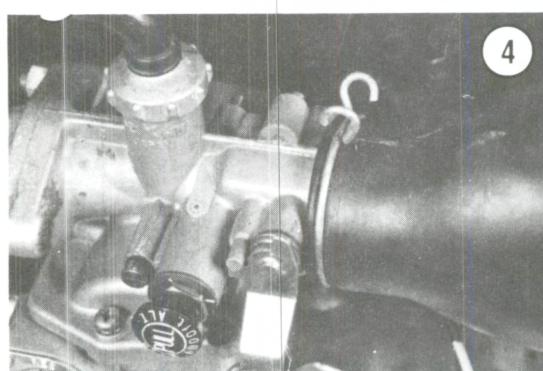
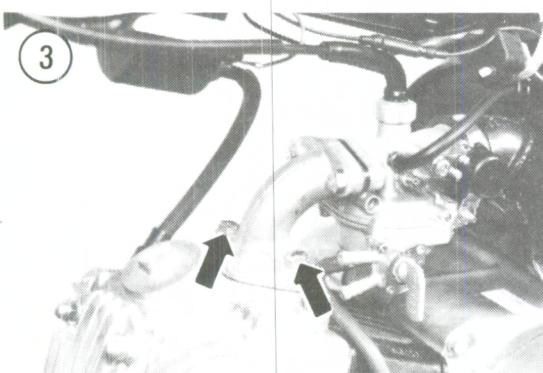
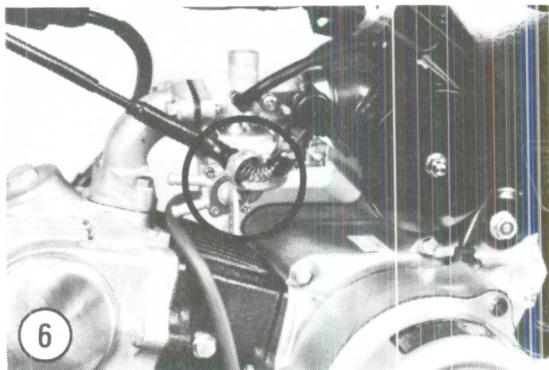
Carburetor specifications are in **Table 1** at the end of this chapter.

### Removal/Installation

This procedure represents a typical carburetor removal and installation sequence. Minor variations exist among the different models and years. Pay particular attention to the location and routing of the fuel lines to the carburetor and the overflow and vent tubes from the carburetor through the clips on the side of the engine.

1. Place the ATC on level ground and set the parking brake or block the wheels so the vehicle will not roll in either direction.
2. Remove the seat/rear fender assembly.





3. Remove the fuel lines to the carburetor (**Figure 1**). Plug the ends of the fuel lines with golf tees to prevent the discharge of fuel (**Figure 2**).  
 4. Remove the fuel tank as described in this chapter.  
 5. Remove the bolts (**Figure 3**) securing the intake tube to the cylinder head.  
 6A. On ATC90 models, move the wire retaining clamp (**Figure 4**) off the carburetor and slide it back onto the air cleaner.  
 6B. On all other models, loosen the clamping screw (A, **Figure 5**) on the intake tube from the air cleaner.

#### *NOTE*

*Before removing the top cap, thoroughly clean the area around it so no dirt will fall into the carburetor.*

7. Unscrew the carburetor top cap (B, **Figure 5**) and pull the throttle valve assembly up and out of the carburetor.

#### *NOTE*

*If the top cap and throttle valve assembly are not going to be removed from the throttle cable for cleaning, wrap them in a clean shop cloth or place them in a plastic bag to help keep them clean.*

8. To remove the throttle valve from the throttle cable (**Figure 6**), depress the throttle spring away from the throttle valve. Push the throttle cable end down and out along the groove in the side of the throttle valve and remove the throttle valve and needle jet assembly.

#### *NOTE*

*Do not lose the spring clip that will come out when the needle is removed.*

9. On ATC125M models, loosen the clamping band (C, **Figure 5**) and unhook the choke cable end (D, **Figure 5**) from the carburetor.

10. Note the routing of the carburetor overflow and vent tubes through the clips on the side of the engine. Carefully pull the tubes free from the clips; leave them attached to the carburetor.

11. Take the carburetor to a workbench for disassembly and cleaning.

12. Install by reversing these removal steps, noting the following.

13. Make sure the mounting bolts on the intake tube are tight to avoid a vacuum loss and possible valve damage.

#### Disassembly/Assembly (Type I)

The Type I carburetor (Figure 7) is used on the following models:

- a. 1973-1974 ATC70.
- b. ATC90.

Refer to the exploded view drawing when disassembling and assembling this carburetor. After assembly, adjust the carburetor as described in this chapter.

#### Disassembly/Assembly (Type II)

The Type II carburetor (Figure 8) is used on the following models:

- a. 1978-on ATC70.
- b. ATC110.
- c. ATC125M.

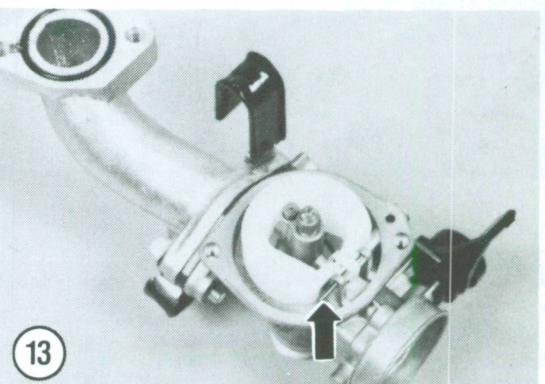
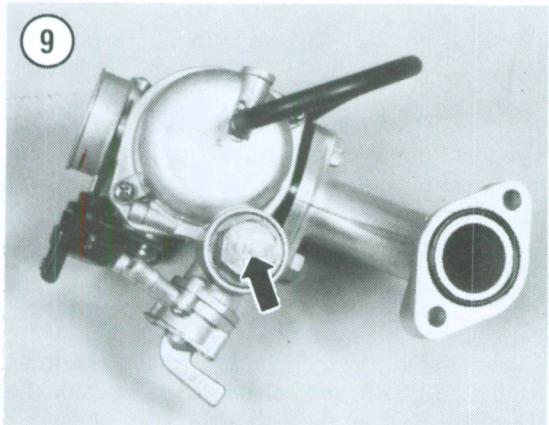
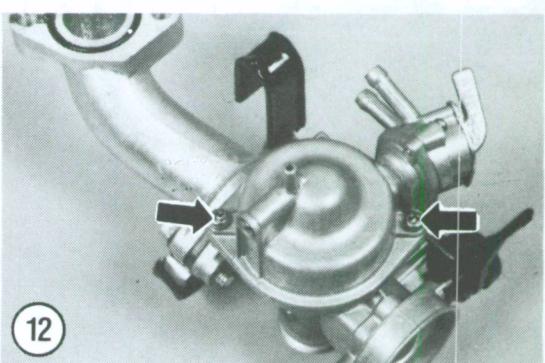
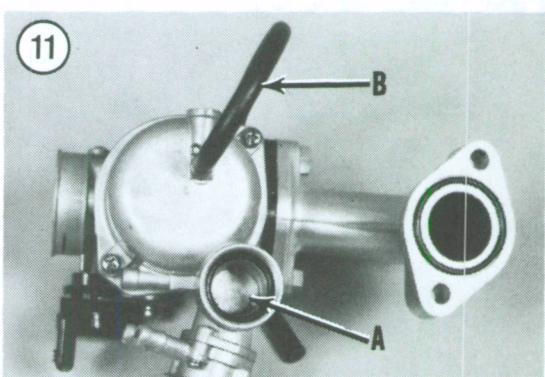
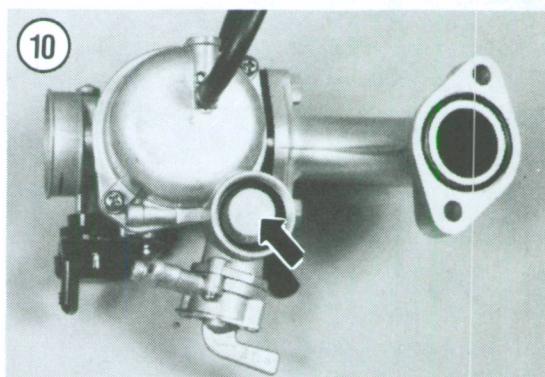
1. On 1984 ATC110 and ATC125M models, perform the following:

- a. Unscrew the fuel strainer cup from the float bowl (Figure 9).
- b. Withdraw the fuel strainer (Figure 10).
- c. Remove the O-ring seal (A, Figure 11).

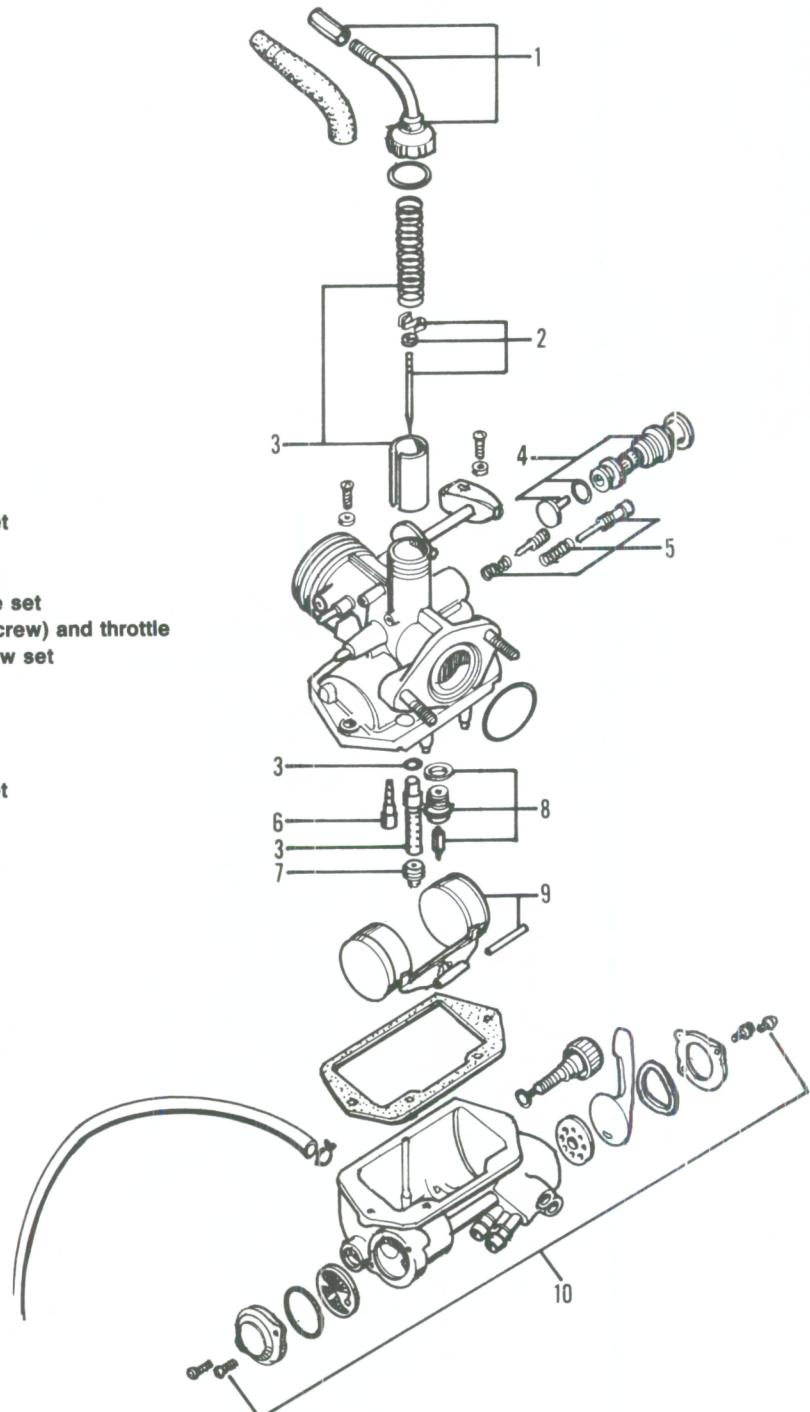
2. Remove the drain tube (B, Figure 11).

3. Remove the screws (Figure 12) securing the float bowl and remove the float bowl.

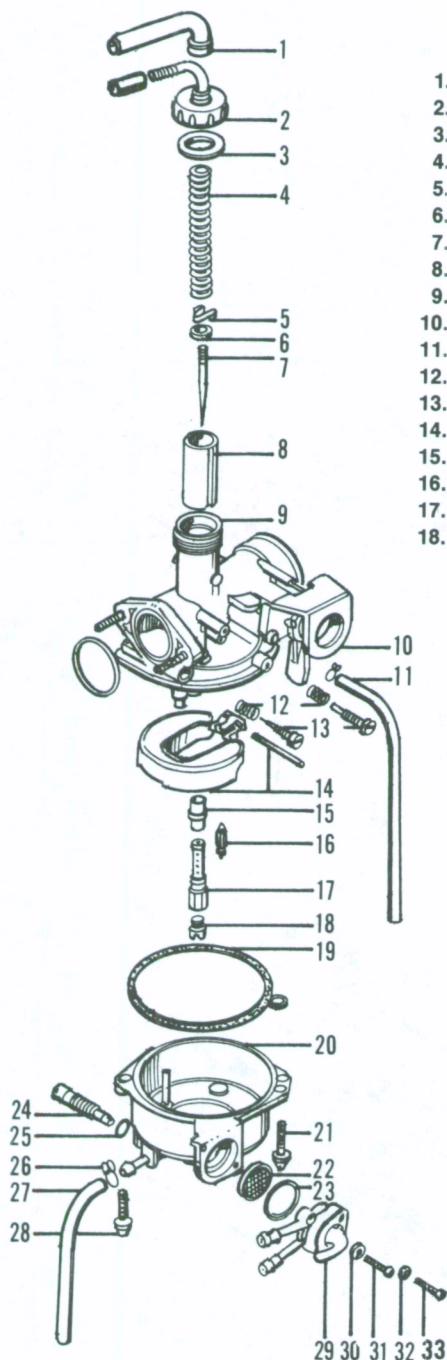
4. Remove the float pivot pin (Figure 13) and remove the float.



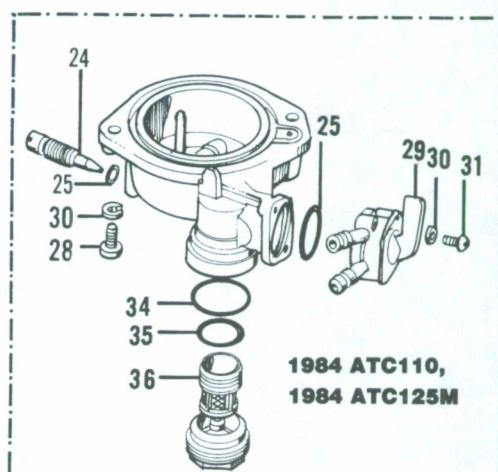
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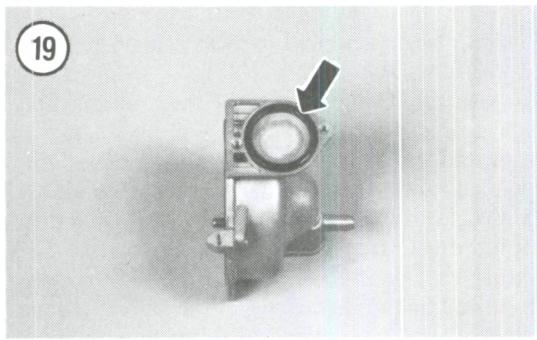
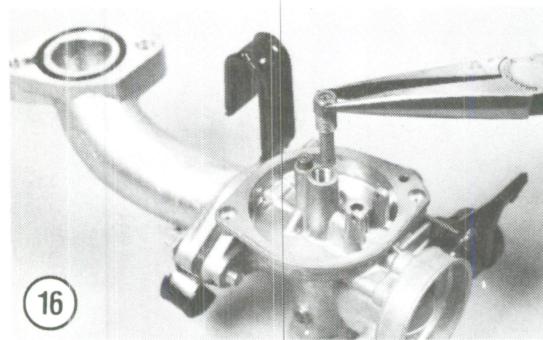
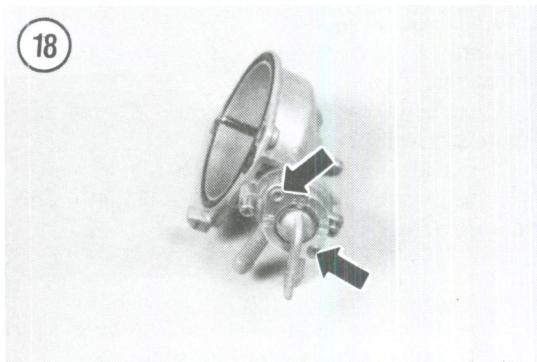
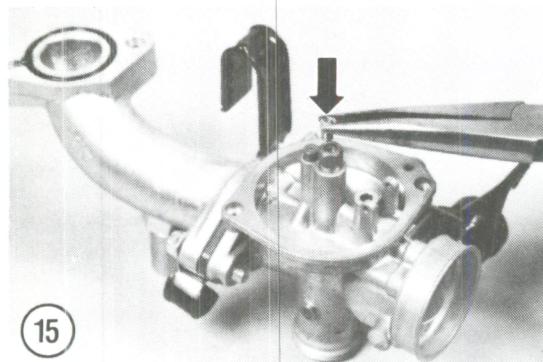
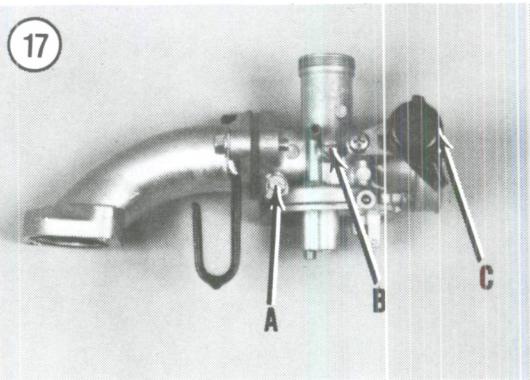
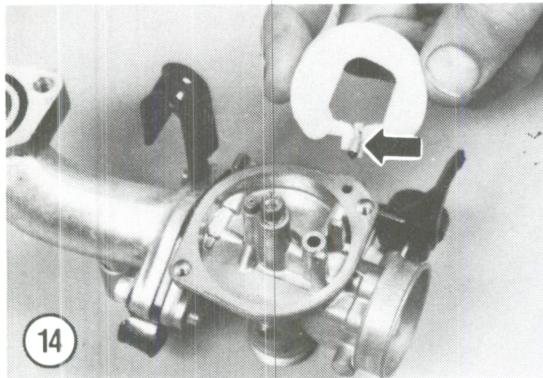
**CARBURETOR ASSEMBLY (TYPE I)**

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**CARBURETOR ASSEMBLY (TYPE II)**

1. Rubber sleeve
2. Top cap
3. Gasket
4. Spring
5. Spring clip
6. Needle jet clip
7. Jet needle
8. Throttle valve slide
9. Carburetor body
10. Shutoff valve shield
11. Overflow tube
12. Spring
13. Throttle speed adjust screw
14. Float and float pivot pin
15. Needle jet
16. Float valve
17. Needle jet holder
18. Main jet
19. Gasket
20. Float bowl
21. Screw
22. Screen
23. O-ring
24. Drain screw
25. O-ring
26. Clip
27. Drain tube
28. Screw
29. Fuel shutoff valve
30. Washer
31. Screw
32. Washer
33. Screw
34. O-ring
35. O-ring
36. Fuel strainer





5. Remove the float valve from the float arm (**Figure 14**).

6. Remove the main jet (**Figure 15**) and the needle jet holder (**Figure 16**).

7. Turn the carburetor over and catch the needle jet as it falls out into your hand. If the needle jet does not fall out, use a plastic or fiber tool and gently push the needle jet out. Do not use any metal tool for this purpose.

8. Do not remove the slow jet (on some models, it is pressed in place).

**NOTE**

Before removing the pilot screw, carefully screw it in until it **lightly** seats.

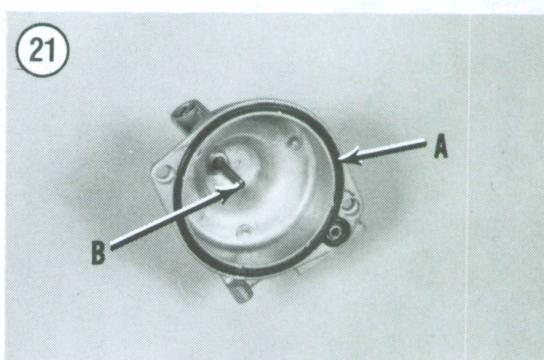
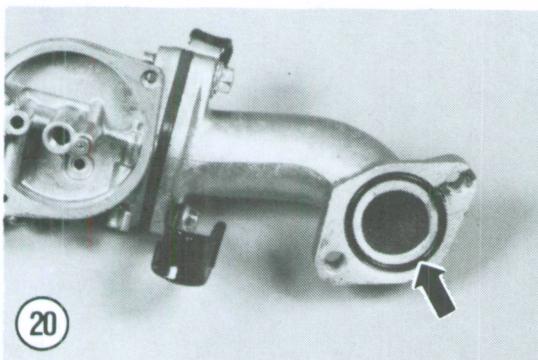
*Count and record the number of turns so it can be installed in the same position.*

9. Unscrew the pilot screw and spring (A, **Figure 17**).

10. Unscrew the idle adjust screw and spring (B, **Figure 17**).

11. Remove the choke assembly from the carburetor body (C, **Figure 17**).

12. Remove the screws (**Figure 18**) securing the fuel shutoff valve and the fuel strainer assembly and remove them from the float bowl. Remove the O-ring seal and filter (**Figure 19**) from the float bowl.

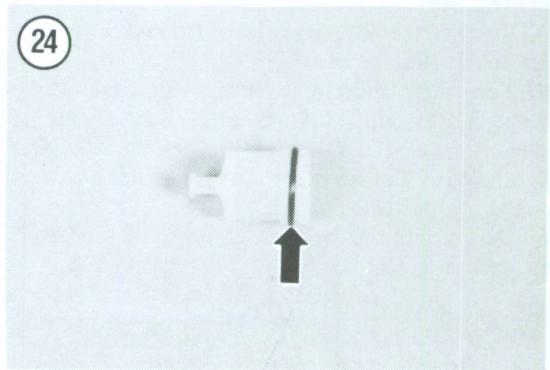
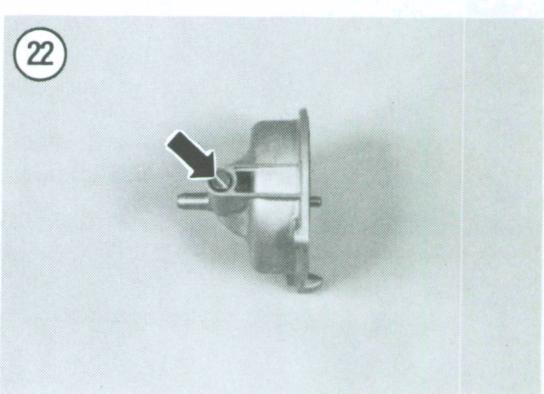


13. Remove the O-ring seal (Figure 20) from the carburetor mounting flange.
14. Remove the float bowl gasket (A, Figure 21) from the float bowl.
15. Unscrew the drain screw and O-ring seal (Figure 22) from the float bowl.
16. If not already removed, push the jet needle from the throttle slide. Do not lose the jet needle retaining clip.

*NOTE*

*Further disassembly is neither necessary nor recommended. If throttle or choke shafts or butterflies are damaged, take the carburetor body to a dealer for replacement.*

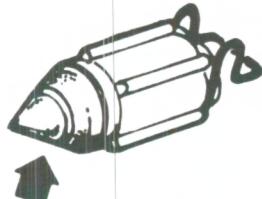
17. Clean and inspect all parts as described in this chapter.
18. Assembly is the reverse of these disassembly steps, noting the following.
19. Install the needle jet with the chamfered end facing out toward the needle jet holder (Figure 23).
20. On 1984 ATC110 and ATC125M models, inspect the O-ring seal (Figure 24) on the fuel strainer; replace if necessary.
21. Install the needle jet clip in the correct groove; refer to Table 1 at the end of this chapter.
22. Check the float height and adjust if necessary as described in this chapter.
23. After the carburetor has been disassembled the pilot screw and the idle speed should be adjusted as described in this chapter.



#### Cleaning/Inspection

1. Clean all parts, except rubber or plastic parts, in a good grade of carburetor cleaner. This solution is available at most automotive or motorcycle supply stores in a small, resealable tank with a dip basket for just a few dollars. If it is tightly sealed when not in use, the solution will last for several cleanings. Follow the manufacturer's instructions for correct soak time (usually about 1/2 hour).

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2. Remove all parts from the cleaner and blow dry with compressed air. Blow out the jets with compressed air. *Do not* use a piece of wire to clean them as minor gouges in the jet can alter flow rate and upset the fuel-air mixture.
3. Be sure to clean out the overflow tube in the float bowl from both ends (B, Figure 21).
4. Inspect the end of the float valve needle (Figure 25) for wear or damage; replace if necessary.
5. Inspect the condition of all O-ring seals. O-ring seals tend to become hardened after prolonged use and heat and therefore lose their ability to seal properly.
6. On models so equipped, clean the filter screen with a medium soft toothbrush and solvent. Thoroughly dry with compressed air. Replace the filter screen if it is broken or damaged.

## CARBURETOR ADJUSTMENTS

### Float Adjustment

The carburetor assembly has to be removed and partially disassembled for this adjustment.

1. Remove the carburetor as described in this chapter.
2. Remove the float bowl from the main body.
3. Hold the carburetor so the float arm is just touching the float needle, not pushing it down. Use a float level gauge, vernier caliper or small ruler (Figure 26) and measure the distance from the carburetor body to the float. The correct height is listed in Table 1.
- 4A. On models equipped with a plastic float the float assembly must be replaced if float height is incorrect. The float tang cannot be adjusted as it will break off.
- 4B. On models with a metal float assembly, adjust by carefully bending the tang on the float arm (Figure 27). If the float level is set too high, the result will be a rich fuel-air mixture. If it is set too low the mixture will be too lean.
5. Reassemble and install the carburetor.

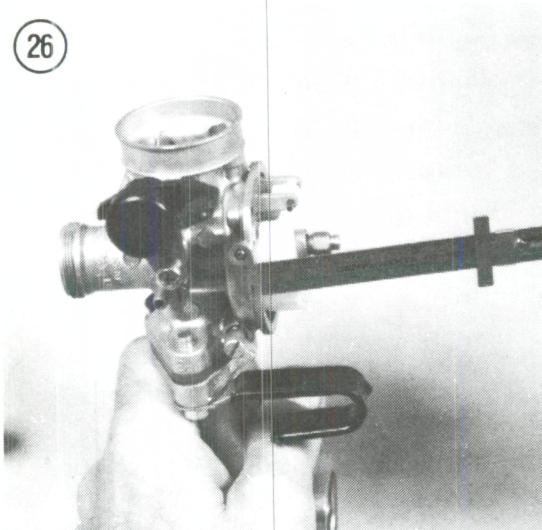
### Needle Jet Adjustment

The position of the needle jet can be adjusted to affect the fuel-air mixture for medium throttle openings. It is not necessary to remove the carburetor body but the top of the carburetor must be removed for this adjustment.

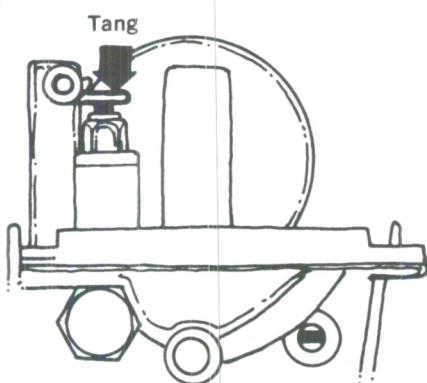
#### NOTE

*Honda does not provide specifications for all models and years. Some late models have a needle jet with a fixed clip position (non-adjustable). Refer to Table 1 before starting this procedure.*

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(27)



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